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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,355	03/06/2002	Paul Kleinberger	02/23506	2866

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EXAMINER

FINEMAN, LEE A

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/070,355	Applicant(s) KLEINBERGER ET AL.	
	Examiner Lee Fineman	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 1-15, 17-24, 29, 34, 35 and 38-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 25-28, 30-33, 36, 37 and 56-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/20/02 & 9/24/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Election/Restrictions***

1. Applicant's election of Species X (figure 16) in the response dated 1 December 2003 is acknowledged. Applicant believes that the claim 12 listed by the examiner does not read on figure 16 of Species X. However applicant failed to provide a clear listing of the claims the applicant believes read on elected figure 16. The examiner takes the claims that the applicant did not withdraw as the claims the applicant believes are directed to figure 16. These claims are 16-21, 25-37, 47-53 and 55-63 and include claims 16, 25-28, 32-33, 37, 47-53 and 55 that the examiner stated in the restriction mailed 29 July 2003 as appearing to be generic.

Regarding claims 16, 25-28, 32-33, 37, 47-53 and 55, after reviewing these claims and the applicant's remarks regarding combined images, the examiner believes that claims 16 as amended, 25-28, 32-33 and 37 are not generic since the claims are not directed to every species, but do read on figure 16, species X. Further, applicant states in the remarks that claims 47-53 and 55 relate specifically to spatially multiplexed systems, which are not included in figure 16, species X. Therefore claims 47-53 are not considered generic to all species.

Although applicant disagreed with which claims applied to which species, the applicant did not adequately and specifically point out the supposed errors in the restriction requirement. Accordingly, the requirement is still deemed proper and is therefore made FINAL.

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2. Claims 1-15, 22-24, 38-46 and 54 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

Further, regarding claims 17-19, applicant states that these claims are directed to the elected Species X. However, the beam splitter and two displays included in these claims are clearly drawn to the beam splitter of Species VIII, figure 8, which is non-elected.

Regarding claims 20-21, 29 and 34, applicant states that these claims are directed to the elected Species X. However, the projection display included in these claims is clearly drawn to the projection display of Species IX, figure 9, which is non-elected.

Regarding claim 35, applicant states that this claim is directed to the elected Species X. However, the back projection display included in this claim is clearly drawn to the back projection display of Species XIV, figure 21, which is/are non-elected.

Finally as stated above, applicant noted in their remarks that claims 47-53 and 55 relate to spatially multiplexed systems which is not included in figure 16, species X.

Therefore, claims 17-21, 29, 34-35, 47-53 and 55 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference number "107" in fig. 1b (see page 23, lines 3-6). A proposed drawing

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correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

5. The disclosure is objected to because of the following informalities: On page 50, line 37, "150" should be "155".

Appropriate correction is required.

Claim Objections

6. Claim 63 is objected to because of the following informalities: On line 2 there is the limitation "said wherein said" which is confusing. The examiner suggests removing the first "said." Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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8. Claim 58 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 58 has the limitation “wherein the second optical construction comprises a uniform polarizer.” None of the autostereoscopic systems with superimposed images from the display (figs. 7-9, 16) disclose a uniform polarizer as the second optical construction for enabling a left eye of the viewer to see left imagery data presented by said first optical construction and a right eye of the viewer to see right imagery data presented by said first optical construction, while substantially preventing each of the right and left eyes of the viewer from seeing light from an inappropriate image. In fact, as evidenced by Rehorn (US 2,631,496) the screen A (second optical construction) must be of alternating polarization to provide the stereoscopic images. For the purpose of examination, the uniform polarizer will be taken in conjunction with the birefringent layer with individually switchable elements (claim 57), which is supported by figs. 7-9 and 16 of the instant application.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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10. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Rehorn, U.S. Patent No. 2,631,496.

Regarding claim 16, Rehorn discloses a system for autostereoscopic vision (fig. 4) comprising a first optical construction (20, column 8, lines 71-73) to present superimposed left (22) and right (21) image picture elements of left and right images, respectively, said first optical construction being designed so as to polarize superimposed light of said left image (22) differently than superimposed light of said right image (21) and further so as to differently polarize light of said left image being displayed in adjacent picture elements (22 in section 10 vs. 22 in section 11) and differently polarize light of said right image being displayed in adjacent picture elements (21 in section 10 vs. 21 in section 11); and a second optical construction (23) designed and constructed to be positioned between said first optical construction (20) and a viewer (24, 25) and closer to said first optical construction than said viewer (fig. 4), said second optical construction when so positioned enabling a left eye (24) of the viewer to see left imagery data presented by said first optical construction (fig. 4, column 7, lines 37-40) and a right eye (25) of the viewer to see right imagery data presented by said first optical construction (fig. 4, column 7, lines 31-35), while substantially preventing each of the right and left eyes of the viewer from seeing light from an inappropriate image (column 7, lines 31-43).

11. Claims 32-33, 56 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Morishima et al., U.S. Patent No. 5,875,055.

Morishima et al. discloses in fig. 4 a system for autostereoscopic viewing comprising a first optical construction which comprises a display (1) for displaying a

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uniformly polarized combined image of left and right image picture elements of left and right images (fig. 4); a birefringent layer (30) having individually switchable elements (fig. 5) being positioned in front of said display (fig. 4) and serving for re-dividing said uniformly polarized combined image by controlled partial light rotation (31), thereby constructing an image having superimposed left and right image picture elements of left and right images, respectively, in which superimposed light of said left image is polarized differently from superimposed light of said right image, light of said left image displayed in adjacent picture elements is polarized differently and light of said right image displayed in adjacent picture elements is polarized differently (figs. 7 and 8); and a second optical construction (2) designed and constructed to be positioned between said first optical construction and a viewer and closer to said first optical construction than the viewer (fig. 4), said second optical construction when so positioned enabling a left eye (E_L) of the viewer to see left imagery data presented by said first optical construction (fig. 4) and a right eye (E_R) of the viewer to see right imagery data presented by said first optical construction (fig. 4) while substantially prevent each of the right and left eyes of the viewer from seeing light from an inappropriate image and wherein the second optical construction comprises a plurality of polarizing strips, each strip having a polarization orientation orthogonal to that of the strips to which it is adjacent (column 5, lines 38-46); and wherein said display is pixilated (column 6, lines 18-20) and wherein said individually switchable elements of said birefringent layer are each optically aligned with a respective pixel of said display device, and wherein each of said individually switchable elements of said birefringent layer is controlled to vary the polarization of output light from a display pixel with which it is optically aligned (figs. 7 and 8).

12. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Faris, U.S. Patent No. 5,264,964 or Omar et al., U.S. patent No. 6,449,090 B1.

Faris discloses in fig. 5 a system for stereoscopic (figs. 5a, 5b) or autostereoscopic (fig. 5c) viewing, the system designed and controlled to present a combined image (8) of left (L) and right (R) image picture elements of left and right images (fig. 2).

Omar et al. discloses in fig. 5 a system for stereoscopic or autostereoscopic viewing (fig. 5), the system designed and controlled to present a combined image (from 5 and 8) of left and right image picture elements of left and right images.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleinberger et al., U.S. Patent No. 5,822,117.

Regarding claim 25, Kleinberger et al. disclose in fig. 5 a system for stereoscopic viewing comprising a display (1) for displaying a uniformly polarized (column 23, lines 45-47) combined image (22) of left (31 or 32) and right (the other of 31 or 32) picture elements of left and right images; and a birefringence layer (39) having elements positioned in front of said display (fig. 5) and serving for re-dividing said uniformly

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polarized combined image by controlled partial light rotation (each birefringent element rotates each display element). Kleinberger et al. discloses the claimed invention except for the birefringent elements being individually switchable (they are all switched by 49). But Kleinberger et al. teaches in fig. 18 a birefringent layer (111 or 112) with individually switchable elements. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the birefringent layer and switching layer with the single birefringent layer with individually switchable elements to reduce the number of parts in the system thereby reducing size and cost of the system.

Regarding claims 26-28, Kleinberger et al. further discloses the birefringent layer with individually switchable elements wherein said controlled partial light rotation is effected by controlled degree of light rotation, controlled time periods of light rotation or both (column 34, lines 46-64).

15. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleinberger et al. in view of Omar et al., U.S. Patent No. 6,449,090 B1.

Kleinberger et al. discloses the claimed invention except for said display including a rear and remote light source producing homogenous light rays and the system further comprising a lens element for focusing light from said display onto said birefringent layer. Both rear and remote light sources and focusing lenses are well known in the art for providing light to a display and for focusing light respectively. For example, Omar et al. teach in fig. 5 rear and remote light sources (14 or 15) for providing light to the display (5 or 8) and a lens element (4 or 5) for focusing light. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a

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well-known rear and remote light source in the system of Kleinberger et al., as it is commonly available and easy to obtain. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a well known lens element in the system for better focus/control of the light from the display to the birefringent layer.

16. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima et al. in view of Omar et al.

Morishima et al. discloses the claimed invention except for said display including a rear and remote light source producing homogenous light rays. Rear and remote light sources are well known in the art for providing light to a display. For example, Omar et al. teach in fig. 5 rear and remote light sources (14 or 15) for providing light to the display (5 or 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a well-known rear and remote light source in the system of Morishima et al., as it is commonly available and easy to obtain.

17. Claims 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima et al. in view of Kleinberger et al.

Morishima et al. discloses the claimed invention except for the second optical construction comprising a birefringent layer with individually switchable elements and a uniform polarizer.

Kleinberger et al. teaches an autostereoscopic system in fig. 18 with a birefringent layer (111 or 112) with individually switchable elements and a uniform polarizer (110 or

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113). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the birefringent layer of Morishima et al. with the birefringent layer with individually switchable elements and a uniform polarizer of Kleinberger et al. to provide more control and flexibility of the size and shape of the alternating birefringent areas.

18. Claims 37, 59-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima et al. in view of Kleinberger et al. as applied to claim 32 above, and further in view of Faris.

Morishima et al. in view of Kleinberger et al. as applied to claim 32 above discloses the claimed invention except wherein the system provides stereoscopic viewing and is further operable to present an image wherein light of said left image is polarized uniformly and the light of said right image is polarized uniformly. Faris in fig. 5 discloses a system for stereoscopic (figs. 5a, 5b) or autostereoscopic (fig. 5c) viewing, the system designed and controlled to present a combined image (8) of left (L) and right (R) image picture elements of left and right images (fig. 2) using movable micropolarizers (18, 19) to provide stereoscopic viewing operable to present an image wherein light of said left image is polarized uniformly and the light of said right image is polarized uniformly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a polarizing system as suggested by Faris to the system of Morishima et al. in view of Kleinberger et al. to provide a more flexible system and provides the viewer with less viewing area restrictions (Faris, column 4, lines 65-68).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313.

The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-23124. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF

March 4, 2004


MARK A. ROBINSON
PRIMARY EXAMINER